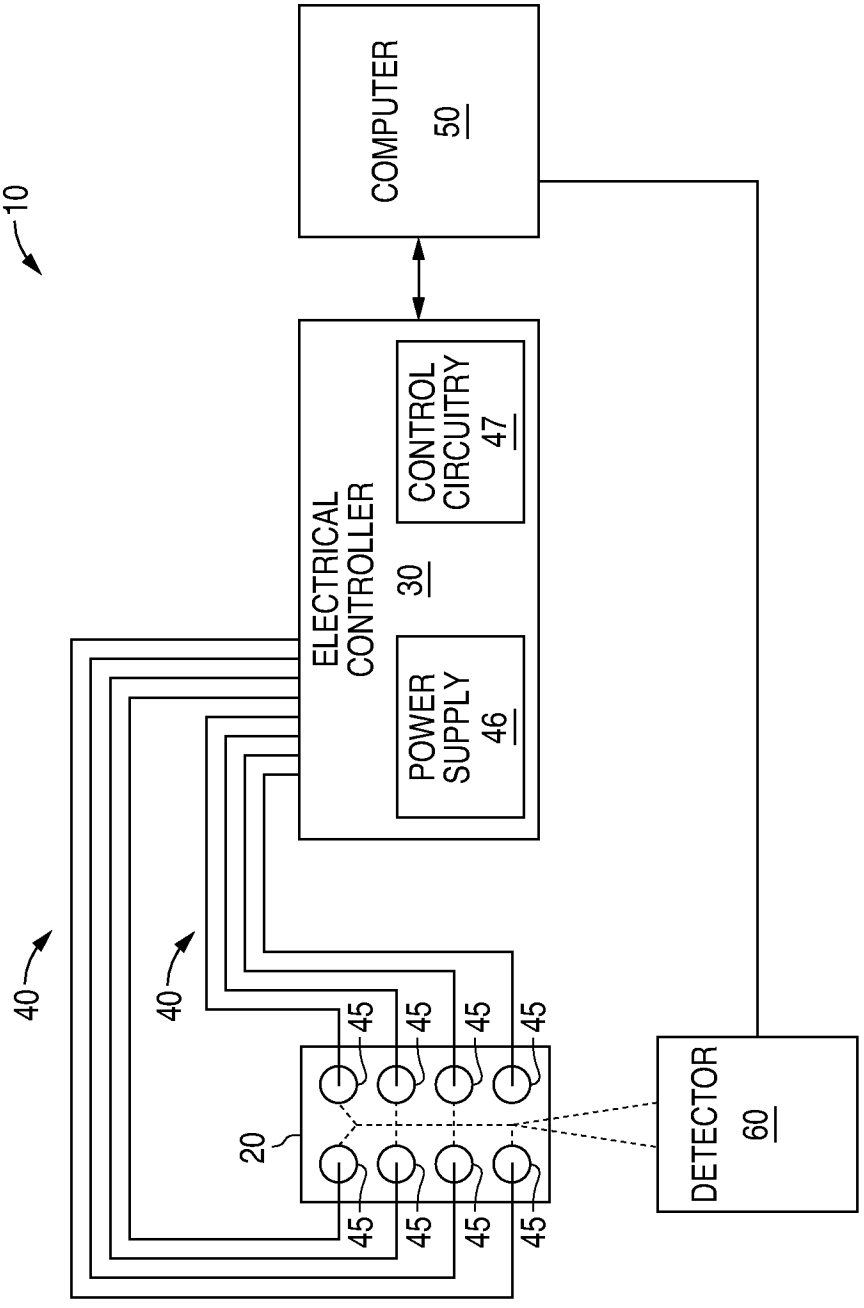

10
COMPUTER
50
ELECTRICAL
CONTROLLER
30
CONTROL
CIRCUITRY
47
POWER
SUPPLY
46
40
40
45
45
45
45
20
45
45
45
45
DETECTOR
60

FIG. 1

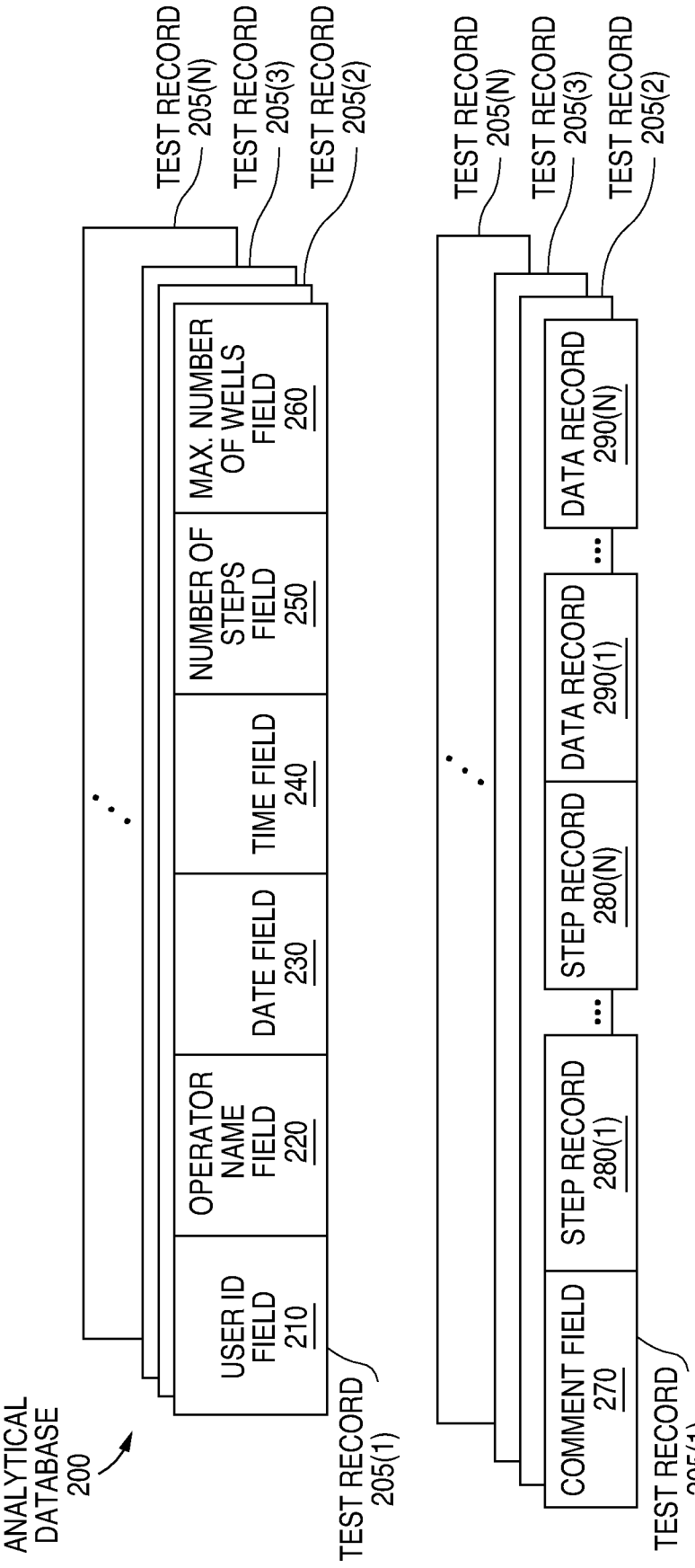

ANALYTICAL DATABASE 200
TEST RECORD 205(1)
USER ID FIELD 210
OPERATOR NAME FIELD 220
DATE FIELD 230
TIME FIELD 240
NUMBER OF STEPS FIELD 250
MAX. NUMBER OF WELLS FIELD 260
TEST RECORD 205(2)
TEST RECORD 205(3)
TEST RECORD 205(N)
COMMENT FIELD 270
STEP RECORD 280(1)
STEP RECORD 280(N)
DATA RECORD 290(1)
DATA RECORD 290(N)

FIG. 2

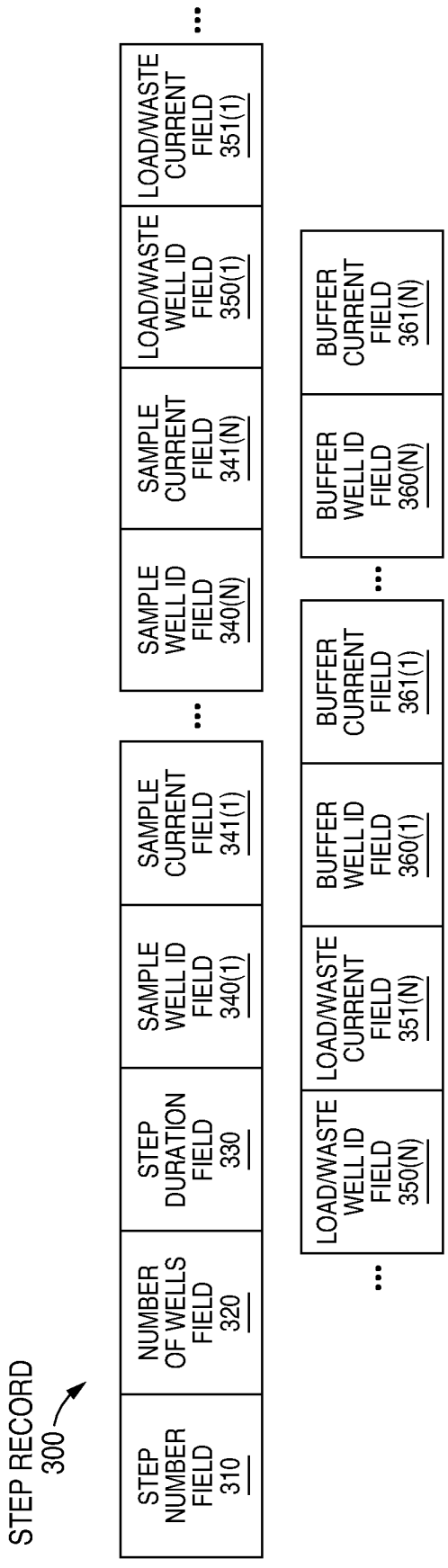

STEP RECORD
300
STEP NUMBER FIELD 310
NUMBER OF WELLS FIELD 320
STEP DURATION FIELD 330
SAMPLE WELL ID FIELD 340(1)
SAMPLE CURRENT FIELD 341(1)
SAMPLE WELL ID FIELD 340(N)
SAMPLE CURRENT FIELD 341(N)
LOAD/WASTE WELL ID FIELD 350(1)
LOAD/WASTE CURRENT FIELD 351(1)
LOAD/WASTE WELL ID FIELD 350(N)
LOAD/WASTE CURRENT FIELD 351(N)
BUFFER WELL ID FIELD 360(1)
BUFFER CURRENT FIELD 361(1)
BUFFER WELL ID FIELD 360(N)
BUFFER CURRENT FIELD 361(N)

FIG. 3

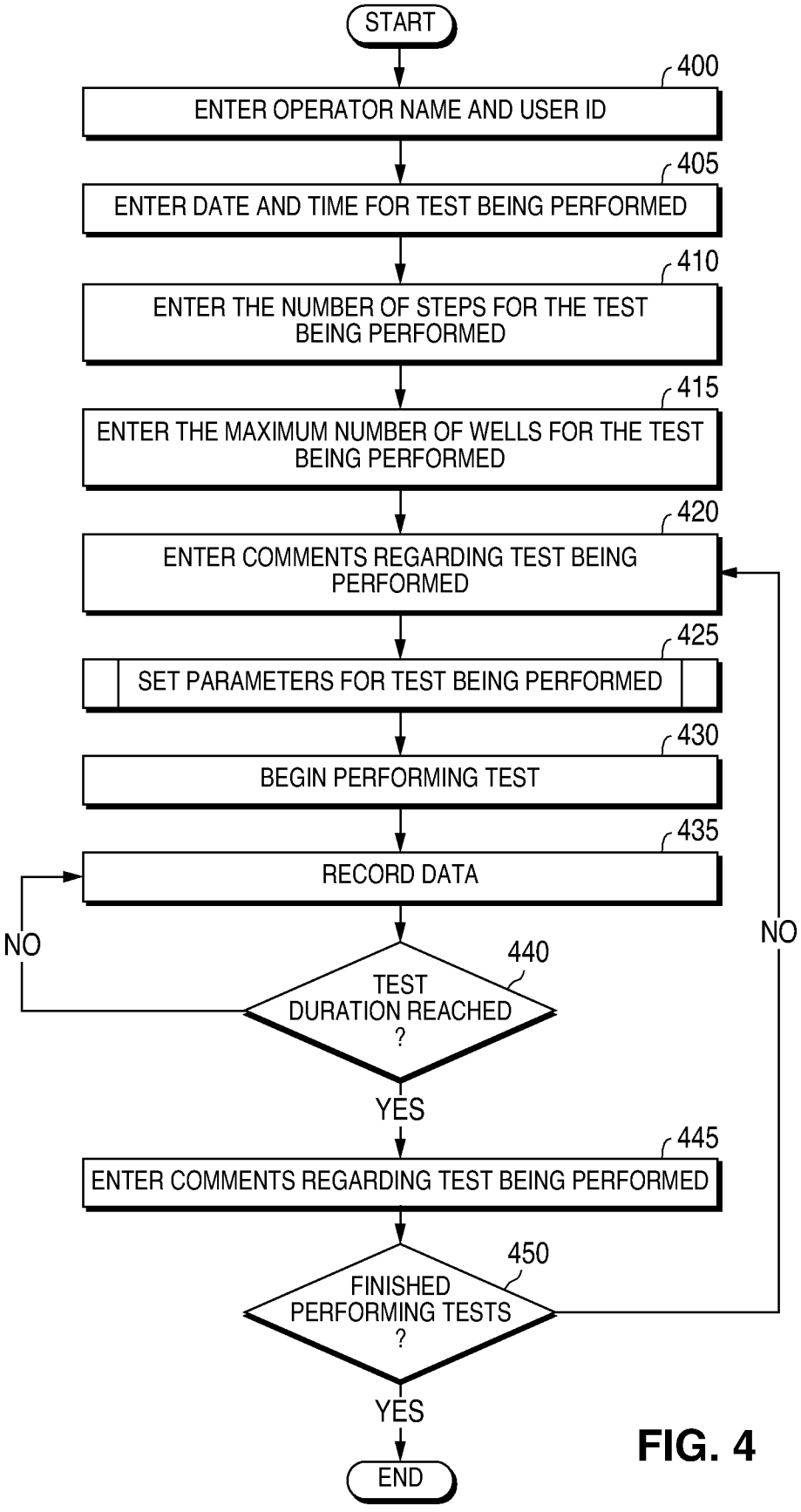

START
400
ENTER OPERATOR NAME AND USER ID
405
ENTER DATE AND TIME FOR TEST BEING PERFORMED
410
ENTER THE NUMBER OF STEPS FOR THE TEST BEING PERFORMED
415
ENTER THE MAXIMUM NUMBER OF WELLS FOR THE TEST BEING PERFORMED
420
ENTER COMMENTS REGARDING TEST BEING PERFORMED
425
SET PARAMETERS FOR TEST BEING PERFORMED
430
BEGIN PERFORMING TEST
435
RECORD DATA
440
TEST DURATION REACHED ?
NO
YES
445
ENTER COMMENTS REGARDING TEST BEING PERFORMED
450
FINISHED PERFORMING TESTS ?
NO
YES
END

FIG. 4

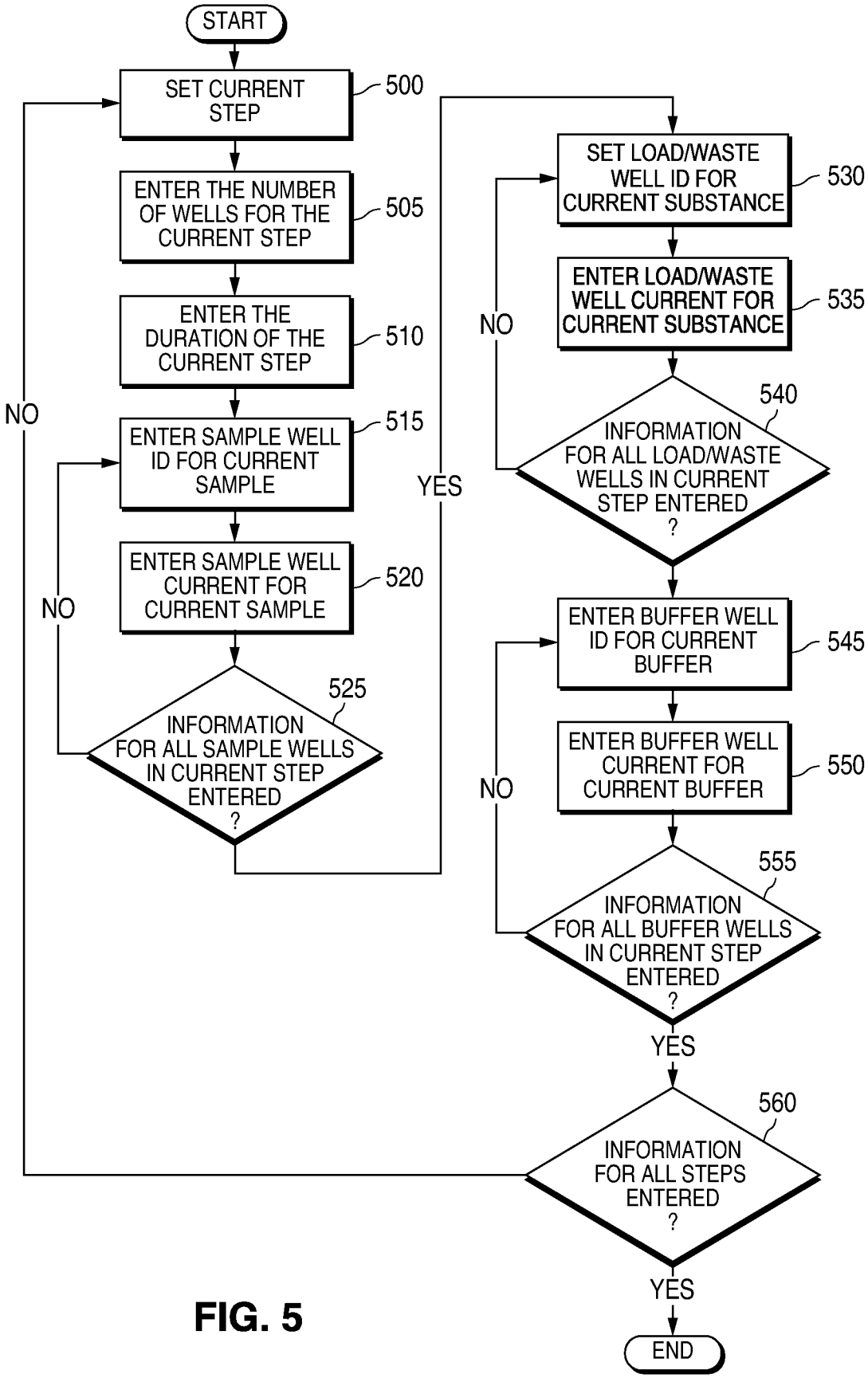

START
SET CURRENT STEP
500
ENTER THE NUMBER OF WELLS FOR THE CURRENT STEP
505
ENTER THE DURATION OF THE CURRENT STEP
510
ENTER SAMPLE WELL ID FOR CURRENT SAMPLE
515
ENTER SAMPLE WELL CURRENT FOR CURRENT SAMPLE
520
INFORMATION FOR ALL SAMPLE WELLS IN CURRENT STEP ENTERED ?
525
NO
NO
YES
SET LOAD/WASTE WELL ID FOR CURRENT SUBSTANCE
530
ENTER LOAD/WASTE WELL CURRENT FOR CURRENT SUBSTANCE
535
NO
INFORMATION FOR ALL LOAD/WASTE WELLS IN CURRENT STEP ENTERED ?
540
ENTER BUFFER WELL ID FOR CURRENT BUFFER
545
ENTER BUFFER WELL CURRENT FOR CURRENT BUFFER
550
NO
INFORMATION FOR ALL BUFFER WELLS IN CURRENT STEP ENTERED ?
555
YES
INFORMATION FOR ALL STEPS ENTERED ?
560
YES
END

FIG. 5

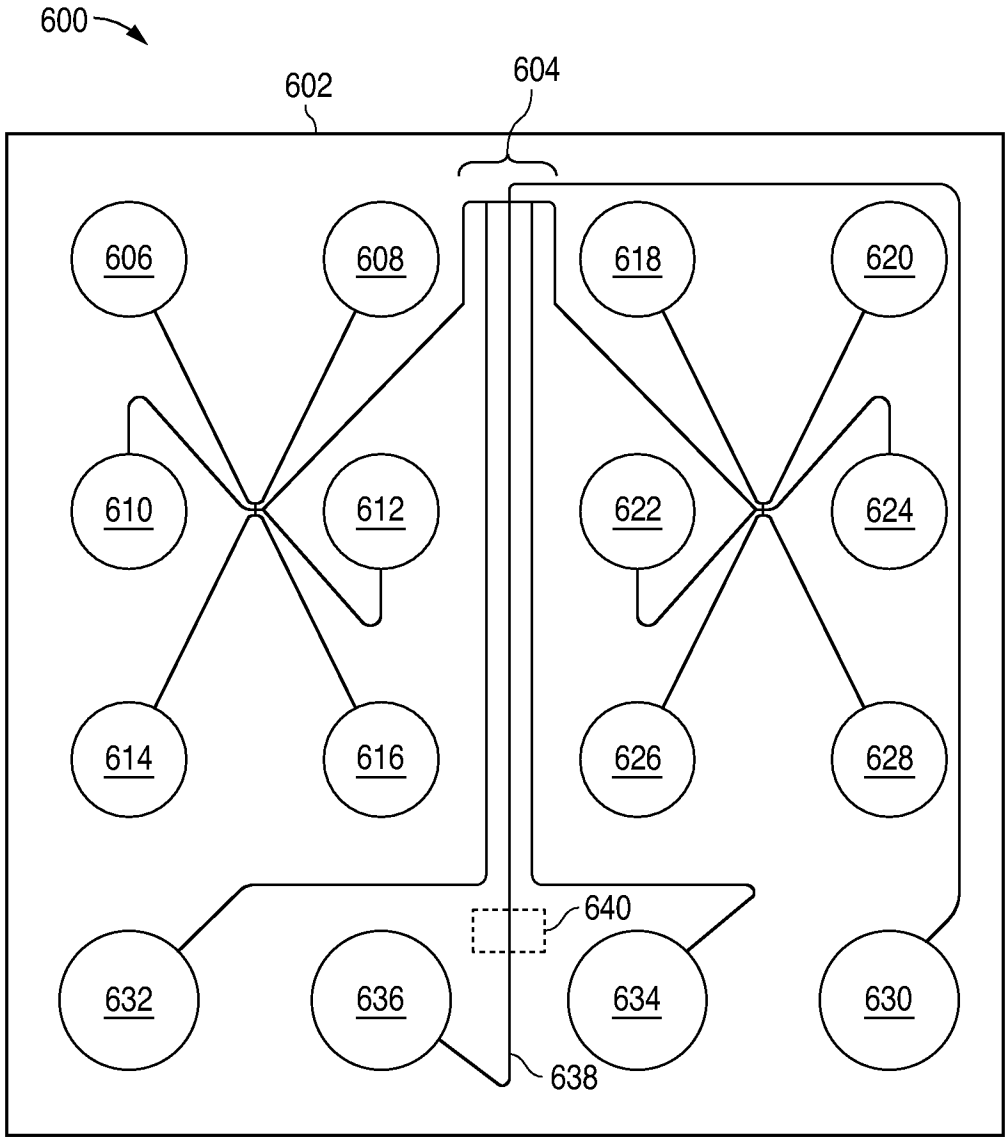
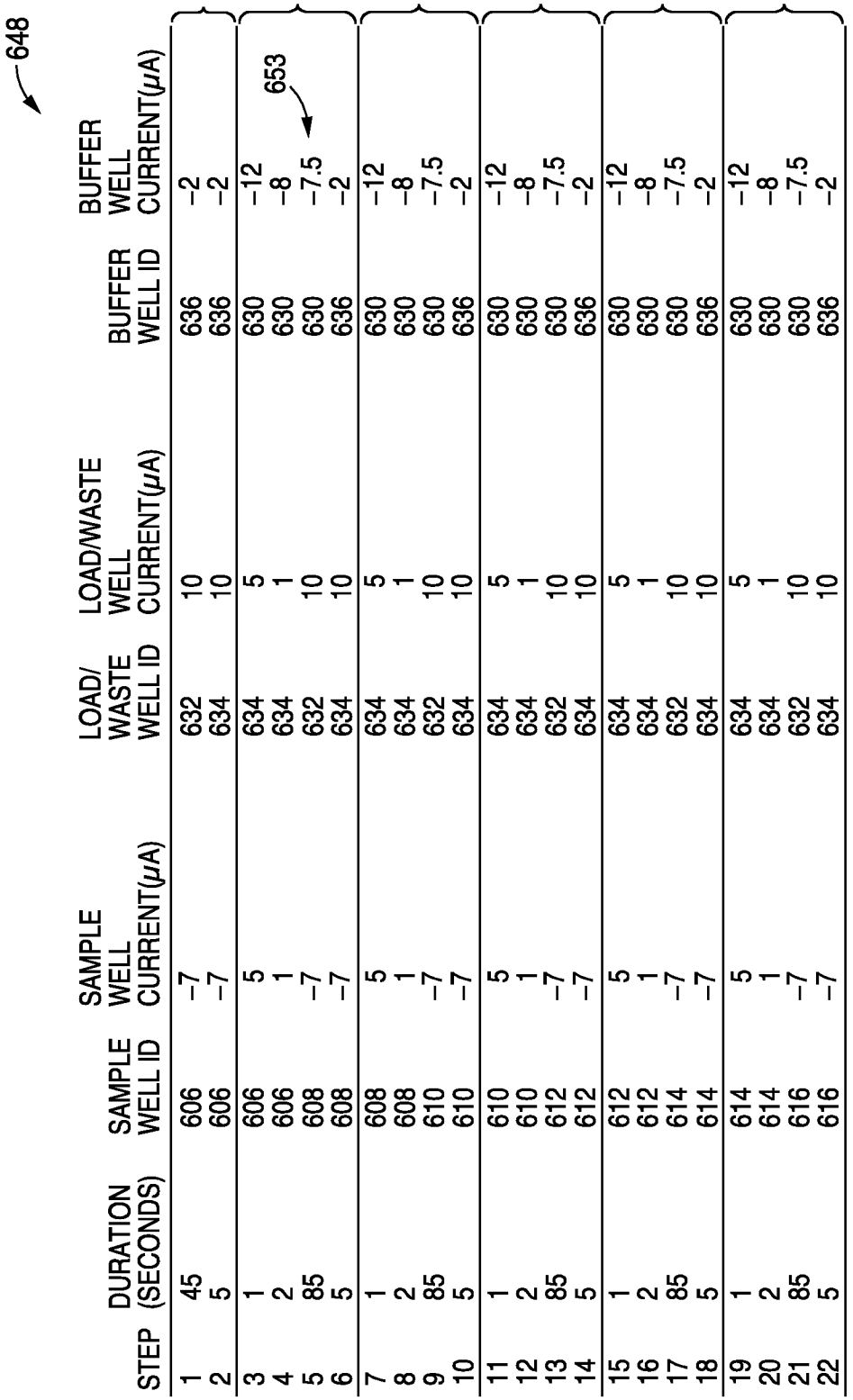

600
602
604
606
608
618
620
610
612
622
624
614
616
626
628
640
632
636
634
630
638

FIG. 6



STEP	DURATION (SECONDS)	SAMPLE WELL ID	SAMPLE WELL CURRENT(μA)	LOAD/ WASTE WELL ID	LOAD/WASTE WELL CURRENT(μA)	BUFFER WELL ID	BUFFER WELL CURRENT(μA)
1	45	606	−7	632	10	636	−2
2	5	606	−7	634	10	636	−2
3	1	606	5	634	5	630	−12
4	2	606	1	634	1	630	−8
5	85	608	−7	632	10	630	−7.5
6	5	608	−7	634	10	636	−2
7	1	608	5	634	5	630	−12
8	2	608	1	634	1	630	−8
9	85	610	−7	632	10	630	−7.5
10	5	610	−7	634	10	636	−2
11	1	610	5	634	5	630	−12
12	2	610	1	634	1	630	−8
13	85	612	−7	632	10	630	−7.5
14	5	612	−7	634	10	636	−2
15	1	612	5	634	5	630	−12
16	2	612	1	634	1	630	−8
17	85	614	−7	632	10	630	−7.5
18	5	614	−7	634	10	636	−2
19	1	614	5	634	5	630	−12
20	2	614	1	634	1	630	−8
21	85	616	−7	632	10	630	−7.5
22	5	616	−7	634	10	636	−2

FIG. 7

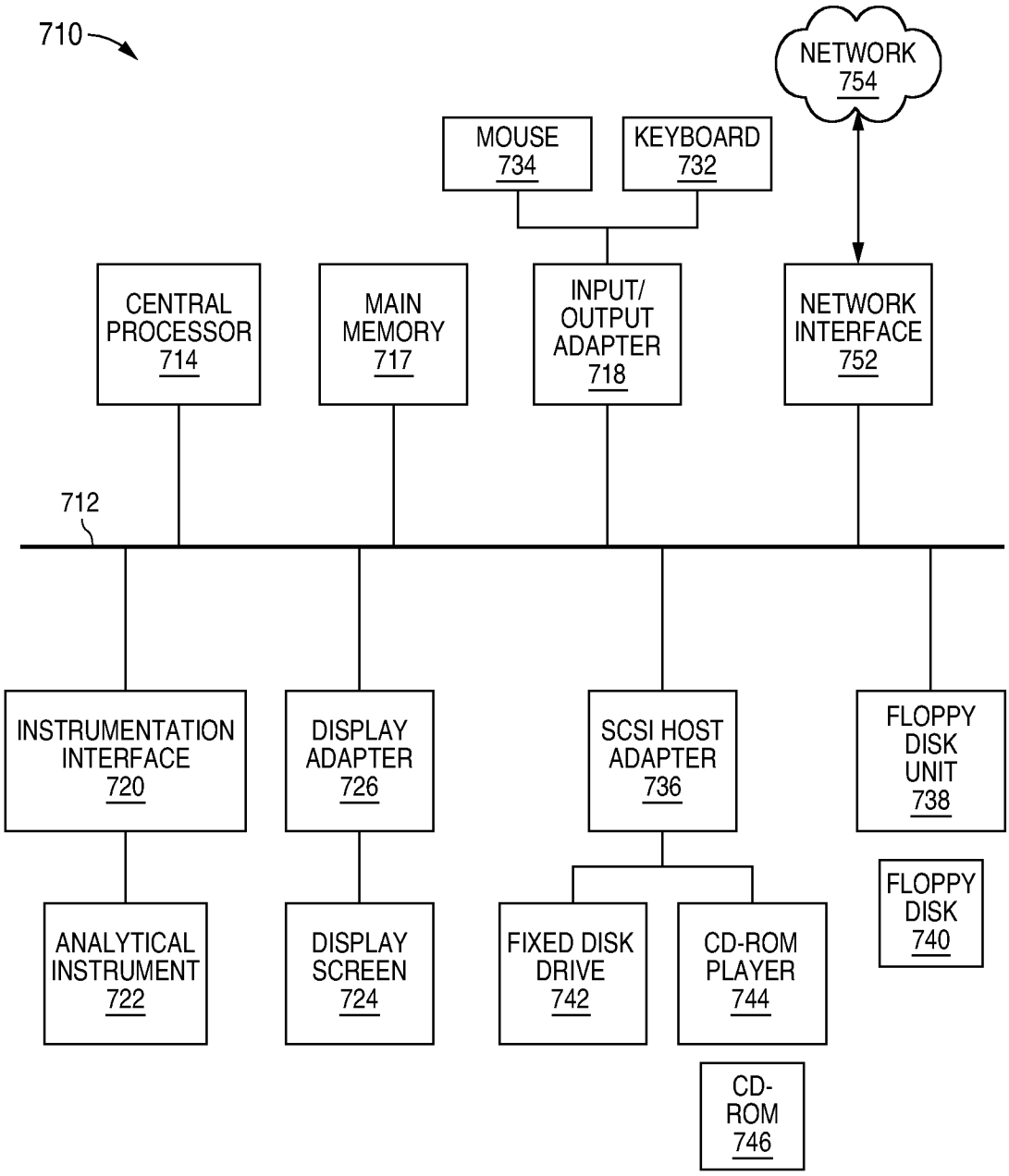

710
NETWORK
754
MOUSE
734
KEYBOARD
732
CENTRAL
PROCESSOR
714
MAIN
MEMORY
717
INPUT/
OUTPUT
ADAPTER
718
NETWORK
INTERFACE
752
712
INSTRUMENTATION
INTERFACE
720
DISPLAY
ADAPTER
726
SCSI HOST
ADAPTER
736
FLOPPY
DISK
UNIT
738
FLOPPY
DISK
740
ANALYTICAL
INSTRUMENT
722
DISPLAY
SCREEN
724
FIXED DISK
DRIVE
742
CD-ROM
PLAYER
744
CD-
ROM
746

FIG. 8

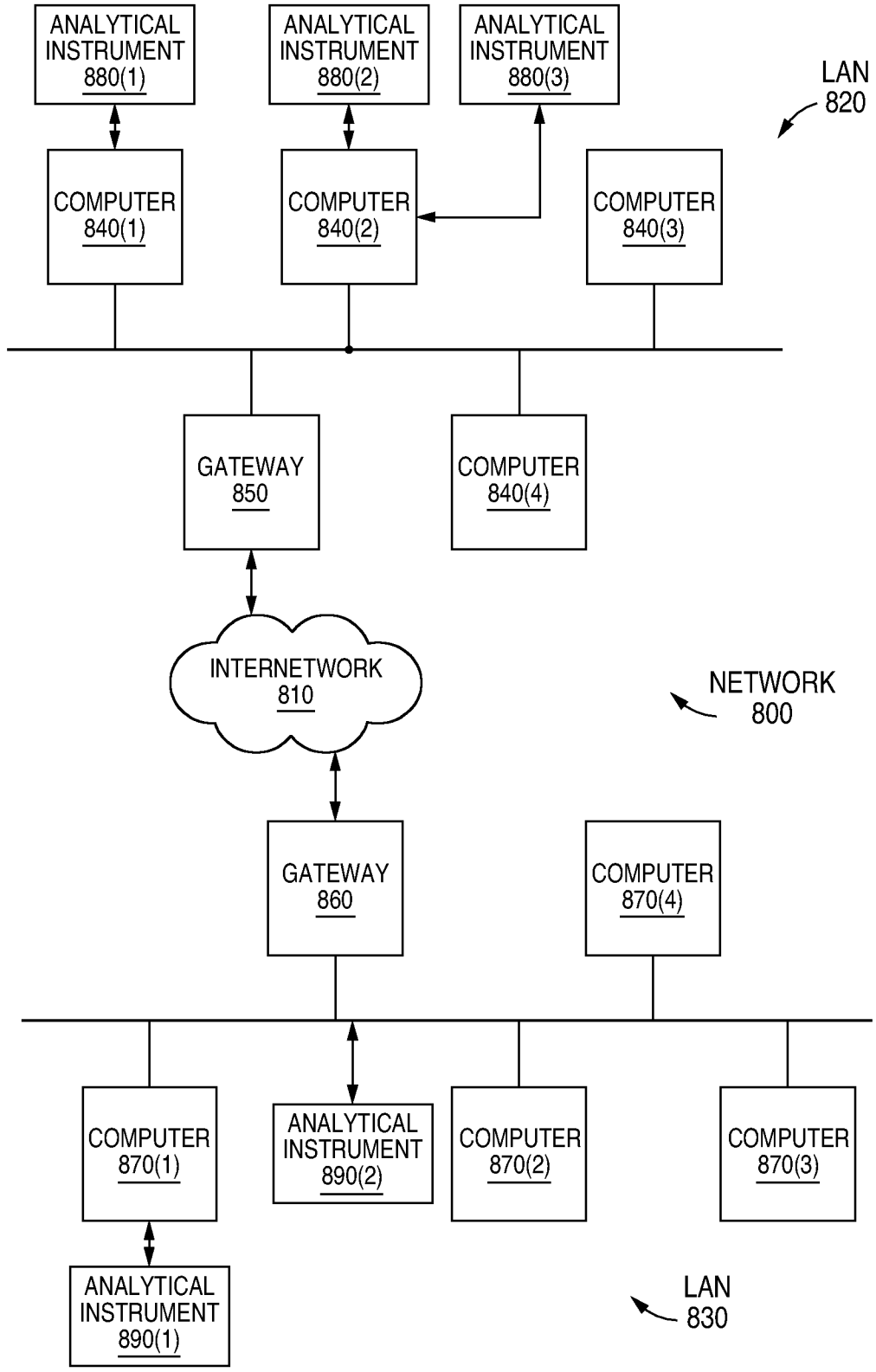

ANALYTICAL INSTRUMENT 880(1)
ANALYTICAL INSTRUMENT 880(2)
ANALYTICAL INSTRUMENT 880(3)
LAN 820
COMPUTER 840(1)
COMPUTER 840(2)
COMPUTER 840(3)
GATEWAY 850
COMPUTER 840(4)
INTERNETWORK 810
NETWORK 800
GATEWAY 860
COMPUTER 870(4)
COMPUTER 870(1)
ANALYTICAL INSTRUMENT 890(2)
COMPUTER 870(2)
COMPUTER 870(3)
ANALYTICAL INSTRUMENT 890(1)
LAN 830

FIG. 9

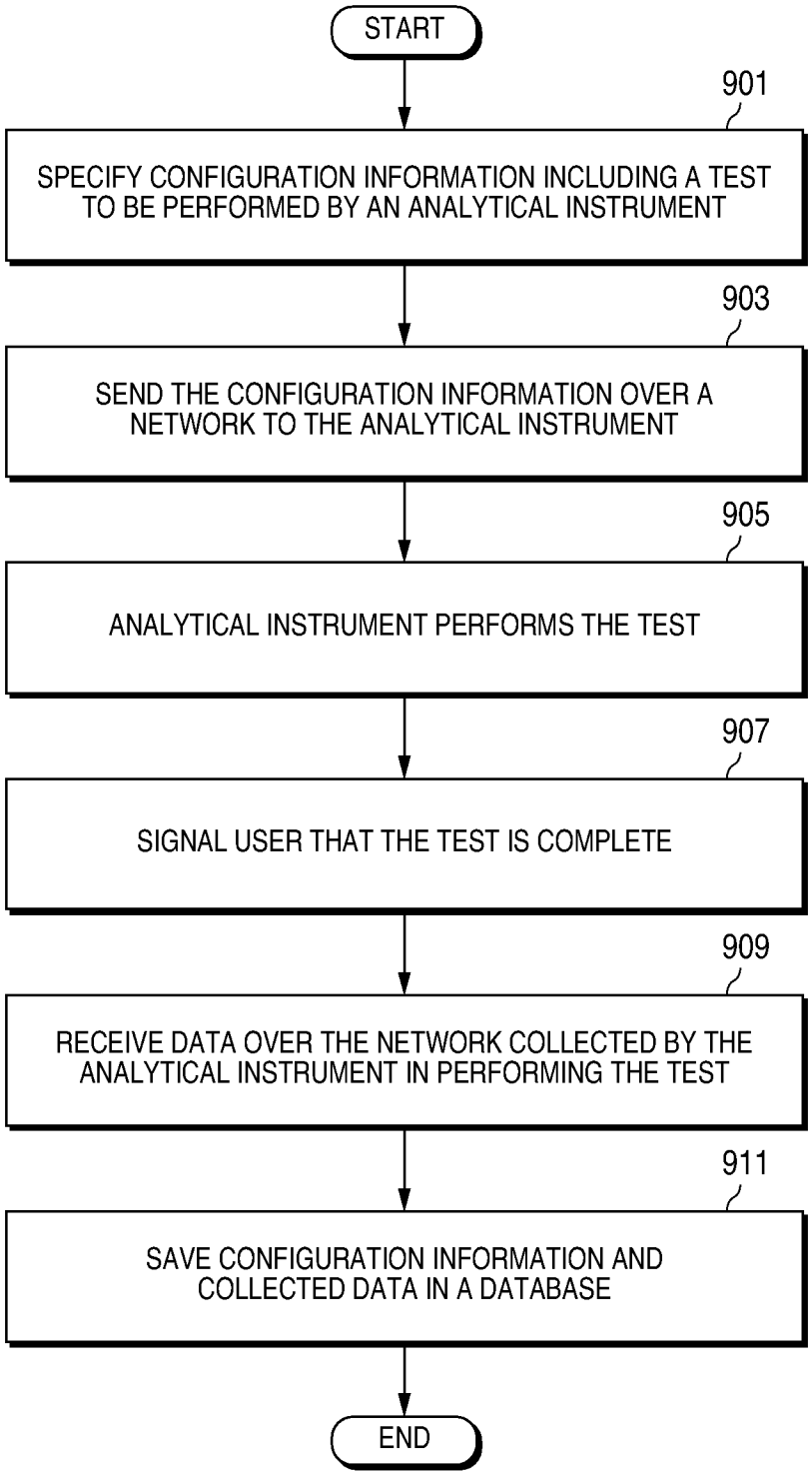

START
901
SPECIFY CONFIGURATION INFORMATION INCLUDING A TEST TO BE PERFORMED BY AN ANALYTICAL INSTRUMENT
903
SEND THE CONFIGURATION INFORMATION OVER A NETWORK TO THE ANALYTICAL INSTRUMENT
905
ANALYTICAL INSTRUMENT PERFORMS THE TEST
907
SIGNAL USER THAT THE TEST IS COMPLETE
909
RECEIVE DATA OVER THE NETWORK COLLECTED BY THE ANALYTICAL INSTRUMENT IN PERFORMING THE TEST
911
SAVE CONFIGURATION INFORMATION AND COLLECTED DATA IN A DATABASE
END

FIG. 10